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LE.H EXAMINER

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ART UNIT PAPER NUMBER

2608

DATE MAILED: 01/26/94

This is a communication from the examiner in charge of your application.  
COMMISSIONER OF PATENTS AND TRADEMARKS

☐ This application has been examined ☒ Responsive to communication filed on 10/8/93 ☐ This action is made final.

A shortened statutory period for response to this action is set to expire 3 month(s), \_\_\_\_\_ days from the date of this letter.  
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

- ☒ Notice of References Cited by Examiner, PTO-892.
- ☐ Notice of Draftsman's Patent Drawing Review, PTO-948.
- ☐ Notice of Art Cited by Applicant, PTO-1449.
- ☐ Notice of Informal Patent Application, PTO-152.
- ☐ Information on How to Effect Drawing Changes, PTO-1474.
- ☐

Part II SUMMARY OF ACTION

- ☒ Claims 1-21 are pending in the application.  
Of the above, claims \_\_\_\_\_ are withdrawn from consideration.
- ☒ Claims 9, 18 have been cancelled.
- ☐ Claims \_\_\_\_\_ are allowed.
- ☒ Claims 1, 2, 4-17, 19-21 are rejected.
- ☐ Claims \_\_\_\_\_ are objected to.
- ☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.
- ☐ This application has been filed with informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.
- ☐ Formal drawings are required in response to this Office action.
- ☐ The corrected or substitute drawings have been received on \_\_\_\_\_. Under 37 C.F.R. 1.84 these drawings are ☐ acceptable; ☐ not acceptable (see explanation or Notice of Draftsman's Patent Drawing Review, PTO-948).
- ☐ The proposed additional or substitute sheet(s) of drawings, filed on \_\_\_\_\_, has (have) been ☐ approved by the examiner; ☐ disapproved by the examiner (see explanation).
- ☐ The proposed drawing correction, filed \_\_\_\_\_, has been ☐ approved; ☐ disapproved (see explanation).
- ☐ Acknowledgement is made of the claim for priority under 35 U.S.C. 119. The certified copy has ☐ been received ☐ not been received ☐ been filed in parent application, serial no. \_\_\_\_\_; filed on \_\_\_\_\_.
- ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.
- ☐ Other

EXAMINER'S ACTION

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1. Claims 4, 5, 14 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 4, line 25 and claim 14 line 28 "said resilient mounting means" lacks antecedent basis.

2. The following is a quotation of 35 U.S.C. § 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

3. Claims 1, 2, 6-9, 12, 13, 16, 17 are rejected under 35 U.S.C. § 103 as being unpatentable over Voroba et al. in view of Langford.

Regarding claims 1, 2, 6-9, 12, 13, 16, 17, Voroba shows an insert earphone comprising: receiver means (70) including terminals (not numbered) for receiving an input electrical signal and an outlet (not numbered); electrical coupling means (62, 64);

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acoustic coupling means (30) having an opening (34); housing means (20, 30, 34, 72, 74, 76) including a chamber portion and tubular portion (34, 76), and a passage having an inlet end portion. Voroba differs from claims 1, 2, 6-9, 12, 13, 16, 17 of the present invention in that it is not provided acoustic damper means comprising a screen at the outlet of the receiver. *However*, providing an acoustic damper at the outlet of an earphone is very well known; further, Langford teaches an acoustic damper means 941, 34) supported within the outlet portion of the receiver means (See figures 1, 2). Since Voroba et al. and Langford teach an earpiece having the outlet of the receiver inserted into the ear of the user, it would have been obvious to one skilled in the art to provide the acoustic damper means, as taught by Langford, in the Voroba earpiece in order to avoid overdriving eardrum as a result of louder-than normal sound and also to use the damper means as filter for cleaning.

Regarding claims 6, 13, Voroba et al. in view of Langford shows the enlarged size of the end section of the tubular portion to limit movement of the damper.

Regarding claim 12, Voroba in view of Langford lacks the teaching of eartips of foam material. However, the ear tips of foam material is just in the preamble; further, Voroba does teach the covering (30) made of a soft, resilient material (See column 9, lines 21, 22). Since Voroba does not restrict any kind of

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material for the ear tips, it would have been obvious to one skilled in the art to provide the soft, resilient material such as the foam material at the Voroba covering or eartip for providing the comfort to the wear.

Regarding claim 7, Voroba et al. in view of Langford lack the teaching of a housing of a molded plastic material. However, the molded plastic housing for an insert earphone is very well known. Therefore, it would have been obvious to one skilled in the art to provide a molded plastic housing for the Voroba et al. in view of Langford housing for containing the parts in the earphone.

Regarding claims 8, 9, 16, Voroba et al. shows the protective shield and the end cap (100) of the housing.

4. Claims 4, 5, 14 are rejected under 35 U.S.C. § 103 as being unpatentable over Voroba et al. in view of Langford and further in view of Busse or Gauthier.

Regarding claims 4, 5, 14, Voroba et al. in view of Langford lack the teaching a resilient foam mounting means as claimed. However, Voroba et al. to teach a cushion (72, 74, 76) encasing a receiver (70) to minimize mechanical vibration feedback. The cushion has been well-known to use for the pillow including a foam rubber. Further, using foaming material to support a transducer is well known in the art. In addition, Busse or Gauthier teaches a foam material supporting a transducer (183 in

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Busse and 26 in Gauthier). Therefore, it would have been obvious to one skilled in the art to provide the foam material as taught by Busse Gauthier encasing the Voroba receiver for the same purpose of minimizing mechanical vibration feedback.

Regarding claim 14, Voroba et al. in view of Langford and Busse or Gauthier lack the teaching of the foaming ear tips. However, providing the foaming ear tips in the insert earphone for the comfort of the user is very well known in the art. This would have been obvious to combine in the combination above.

5. Claim 15 is rejected under 35 U.S.C. § 103 as being unpatentable over Voroba et al. in view of Langford as applied to claim 12 above, and further in view of Kelsey.

Regarding claim 15, Voroba et al. in view of Langford differ from these claims in that Voroba and Langford do not specifically disclose the acoustic coupling means of reduced cross sectional size dimensioned to releasably lock the housing and the acoustic coupling means. Kelsey teaches this acoustic coupling means (10A, 10B, 10C and column 3, lines 40-49). Since Voroba in view of Langford teach an earplug inserted into the ear, it would have been obvious to one skilled in the art to provide the acoustic coupling means, as taught by Kelsey, at the outlet portion of he Voroba et al. in view of Langford for the comfort of the wearer and the pleasing appearance.

6. Claims 10, 11 are rejected under 35 U.S.C. § 103 as being

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unpatentable over Voroba et al. in view of Langford as applied to claim 1 above, and further in view of Killion (4,677,679) or Marutani (JA61-238196).

Voroba in view of Langford shows the electrical coupling means installed within the housing between the end cap members and the receiver (See figures 1, 2, of the Voroba reference). Voroba in view of Langford differ from claims 10, 11 of the present invention in that it is not provided the connection of the electrical coupling means with the capacitors and resistors as claimed. However, Killion ('679) teaches an equalization network circuit 40a (See figure 4) and Marutani teaches an electronic filter circuit (21, 28) between the signal generator and the receiver of an insert earphone, these circuits comprising the resistors and the capacitor connected as claimed. Since connecting an equalization network or an electronic filter having the connections of the capacitors and the resistors between the input and output terminals for equalization and filtering the frequency range is well known in the art. It would have been obvious to one <sup>of ordinary</sup> skill ~~of ordinary skill~~ in the art to provide the equalization circuit, as taught by Killion ('679) or Marutani in the McCabe headset for obtaining a frequency response characteristic which matches with the human ear.

8. Claim 20 is rejected under 35 U.S.C. § 103 as being unpatentable over Mc Cabe in view of Killion or Marutani as

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applied to claim 19 above, and further in view of Langford.

Mc Cabe reference differs from claim 20 of the present invention in that it is not provided acoustic damper means within the outlet of the passage of the tubular portion. However, providing the acoustic damper at the outlet portion of an insert earphone is very well known; further, Langford teaches an acoustic damper means (41, 34). Since Langford teaches this acoustic damper means within the outlet portion of the receiver in the insert earphones, it would have been obvious to one of ordinary skill in the art to provide the damper means, as taught by Langford, in the outlet portion of the Mc Cabe transducer in order to prevent earwax or avoid overdriving eardrum as a result of louder-than normal sound.

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --  
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1, 2 are rejected under 35 U.S.C. § 102(b) as being anticipated by Miyahra et al.

Regarding claims 1, 2, Miyahra et al. teach an insert earphone comprising: receiver means (1); electrical coupling means (56, 4); acoustic coupling means (11); housing means (3, 12) and acoustic damper means (58) including a tubular support

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and a screen (59).

11. Claims 4, 5, 8, 9, 12-14, 16, 17 are rejected under 35 U.S.C. § 103 as being unpatentable over Miyahra et al. in view of Busse or Gauthier.

Regarding claims 4, 5, 14, Miyahra teaches the resilient mounting means (57) as claimed, but lacks the teaching of a resilient foam material. however, providing a resilient foam material supporting the transducer for minimizing mechanical vibration feedback is well known; further, Busse or Gauthier teaches this foam material (See column 7, lines 52-60 in Busse and 26 in Gauthier). Since Miyahra does teach a resilient material encasing the receiver, it would have been obvious to one skilled in the art to provide the foam material, as taught by Busse or Gauthier, encasing the Miyahra receiver for the same purpose of providing a resilient material to minimize mechanical vibration feedback.

12. Claims 6, 12, 13, 15 are rejected under 35 U.S.C. § 103 as being unpatentable over Miyahra et al. in view of Kelsey.

Miyahra et al. reference differ from claims 12, 13 of the present invention in that it does not specifically teach the eartip of foam and the acoustic coupling means dimensioned to releasably lock the housing means and the acoustic coupling means. Kelsey teach this acoustic coupling means (See column 5, line 40-49). Since Kelsey does teach the soft, resilient

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material for coupling means, it would have been obvious as matter of design choice to provide a foam material or a soft rubber in Kelsey coupling for the same purpose of providing a soft resilient material to make the comfort for the wearer.

13. Claims 7, 8, 9, 16, 17 are rejected under 35 U.S.C. § 103 as being unpatentable over Miyahra et al. in view of GB 2155276('276).

Regarding claims 7, 8, 9, 16, Miyahra et al. lacks the teach of an endcap and the molded plastic housing. Since providing a molded plastic housing, an endcap and a cable casing and a protective shield at the endcap of an insert earphone is well known in the art; further GB('276) teaches this end cap and molded plastic housing. Therefore, it would have been obvious to one skilled in the art to provide the molded plastic housing and the end cap, as taught by GB('276), in the Miyahra et al. earphone for containing the elements in the earphone, and connecting the cables and the protective shield to endcaps.

Regarding claim 17, Miyahra in view of GB('276) do not specifically recite the steps of installing the receiver and foldable wrapping the sheet material as claimed. However, Miyahra does teach a resilient support (57) having a rectangular piece of sheet material encasing the receiver (1). Therefore, it would have been obvious to include the steps of making earphone as claimed for installing the receiver encased in the rectangular

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piece of Miyahra earphone.

14. Claims 10, 11 are rejected under 35 U.S.C. § 103 as being unpatentable over Miyahra et al. in view of Killion or Marutani.

Miyahra reference differ from claims 10, 11 of the present invention in that it is not provided the connection of the electrical coupling means with the capacitors and resistors as claimed. However, Killion ('679) teaches an equalization network circuit 40a (See figure 4) and Marutani teaches an electronic filter circuit (21, 28) between the signal generator and the receiver of an insert earphone, these circuits comprising the resistors and the capacitor connected as claimed. Since connecting an equalization network or an electronic filter having the connections of the capacitors and the resistors between the input and output terminals for equalization and filtering the frequency range is well known in the art. It would have been obvious to one skill in the art to provide the equalization circuit, as taught by Killion ('679) or electronic filter as taught by Marutani, having the connections as claimed in the Miyahra for obtaining a frequency response characteristic which matches with the human ear.

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Hartl teaches a cushion (23) between the receiver and the housing.

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16. Applicant's arguments with respect to claims 1, 2, 4-17, 19-21 have been considered but are deemed to be moot in view of the new grounds of rejection.

17. Applicant is noted that the publication (Audio 7/1993) can not be considered because it is not in English.

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Huyen Le whose telephone number is (703) 305-4844.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-4750.



H.LE/TC  
January 13, 1994



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SUPERVISORY PATENT EXAMINER  
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